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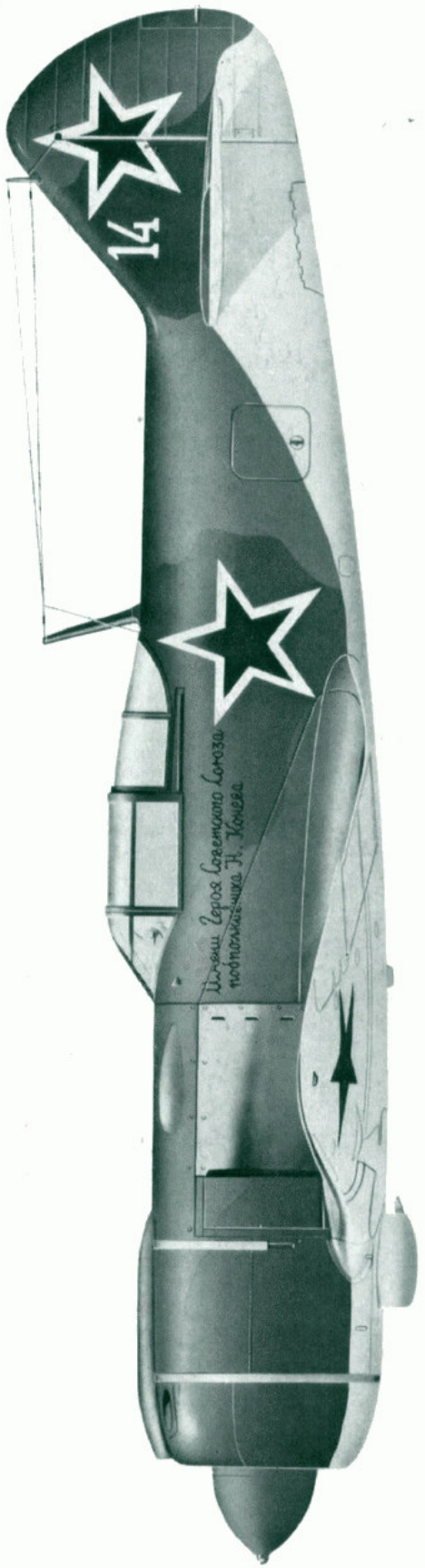

The Lavochkin La 5 & 7

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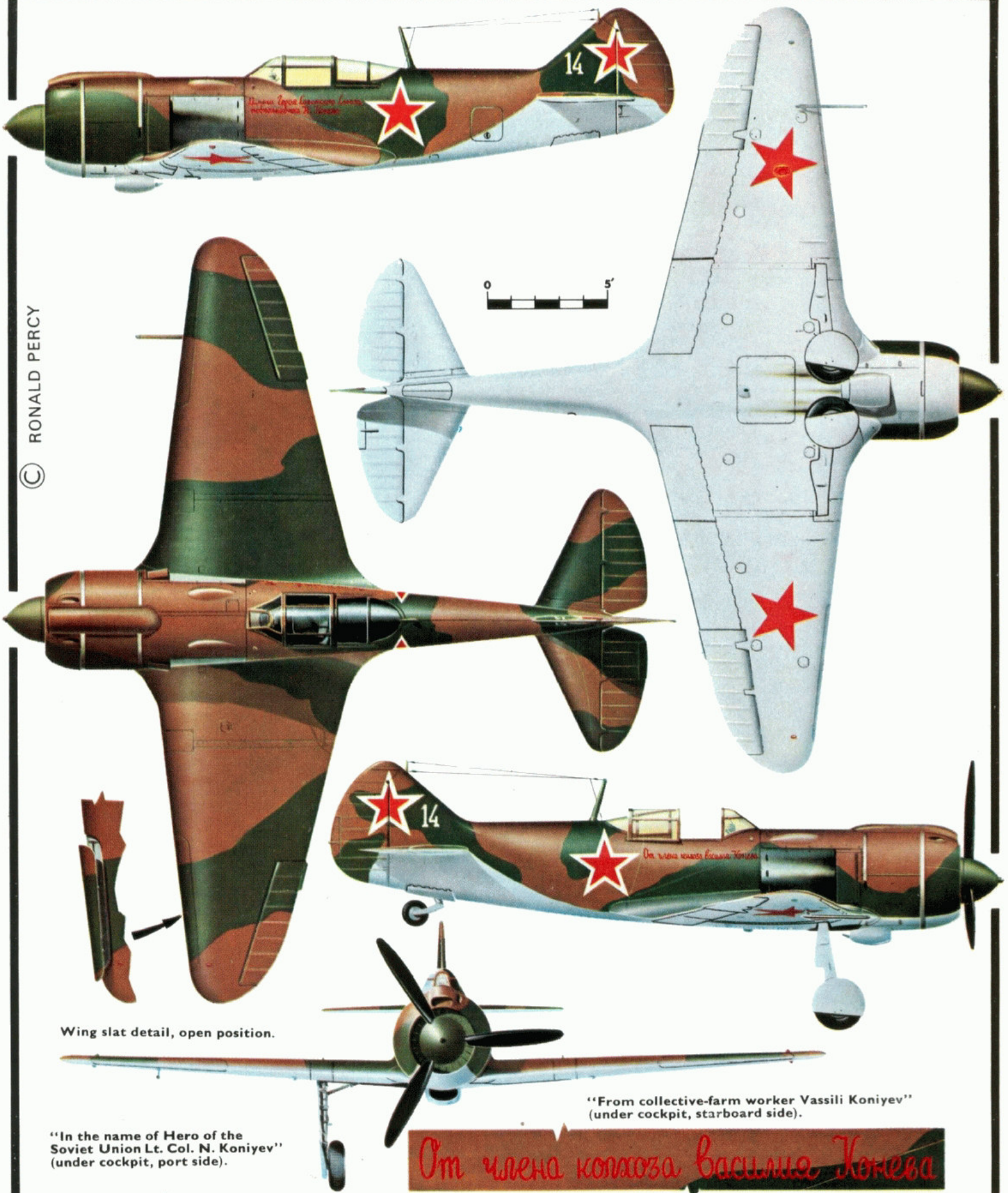

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Wing slat detail, open position.

"In the name of Hero of the Soviet Union Lt. Col. N. Koniyev" (under cockpit, port side).

"From collective-farm worker Vassili Koniyev" (under cockpit, starboard side).

Имени Героя Советского Союза подполковника Н. Конева

От члена колхоза Василия Конева

LAVOCHKIN La 5FN *(Forsirovannyi Nyeposredstvenno)* flown by Ivan Kojedub between 2nd May 1944 and mid-July 1944. Kojedub achieved 62 aerial victories in 520 sorties on Lavochkin fighters; he thus qualifies as the top-scoring ace of any Allied nation in the Second World War.

Nose details of the La 5FN, the most widely used of the wartime Lavochkin fighters. "FN" indicates Forsirovannyi Nyeposredstvenno—"*Direct boost*", *in reference to the direct fuel injection of the M-82FN powerplant.*
(Photo: Lief Boel Hansen via R. Ward)

The Lavochkin La 5 & 7

by Witold Liss

Superficially, the career of the Lavochkin fighters may be compared with that of Japan's Kawasaki Ki-61 and Ki-100 series. Both series were initially represented by in-line engined fighters, and after a long development and many structural changes reached their peak in radial engined machines of radically different appearance to the original variants. Both types were relatively unknown outside their own specific fields of operation. There, however the resemblance ends; the Ki-100 was a very successful but essentially "stop-gap" development forced on a doomed nation by the exigencies of impending defeat; the Lavochkins were a logically developed and progressively improved series of aircraft which gave consistently reliable service in three wars and were carried to the natural limits of their potential in the dawn of the jet age.

The Lavochkins contributed as much to the Allied victory in the Second World War as any other aircraft; indeed, among the pilots who made their reputations on the La 5 and La 7 were the leading aces of the whole anti-Fascist alliance. Yet despite this success the type remains relatively unknown to all but the men actively engaged on the Russian Front and the historians specifically concerned with this vital aspect of the War. The Russian reluctance to reveal information about V.-V.S. equipment for many years after the end of hostilities is undoubtedly responsible; and now that the information is becoming available there is little doubt that the Lavochkins will be elevated to their just place of importance in the annals of the air war. Of classic wooden construction in a decade of all-metal aircraft, they were nevertheless more rugged, less demanding and more effective than many of their more sophisticated contemporaries and opponents. During their operational life they fought Buffaloes, Hurricanes, Messerschmitts, Focke-Wulfs and even Mustangs; and despite their obsolescence by the time they were thrown into the Korean War by the North Korean

Simple in design and rugged in construction, the Lavochkins proved to be the perfect low-altitude fighters for Eastern Front conditions. A typical scene on a Russian airfield; the aircraft is an La 5FN. (Photo: L. B. Hansen via R. Ward)

Air Force, they did not disgrace themselves even then. Their success was not due to any outstanding or novel features, but to sheer common sense in construction and complete suitability for the conditions under which they were called upon to operate. Had they been more sophisticated, more precisely built, and more complicated in construction, it is doubtful if they could have stood up as well as they did to the extremely harsh field conditions of war in the Russian wilderness; and the equally harsh demands made on them by Russian pilots. Simplicity was the keynote, and simplicity paid off handsomely.

Ivan Kojedub (left), *the Russian "ace of aces", receives the congratulations of squadron mates on the award of his second Gold Star in late 1944.* (Photo: the author)

An La 5 taxies out to take off.

DESIGN AND DEVELOPMENT

All examples of the basic Lavochkin fighter series, from the LaGG 1 through the LaGG 3, La 5, La 7, La 9 and La 11 up to the La 15, originated in the same design bureau, that led by Syemyon A. Lavochkin. In the early stages of his bureau's operations Lavochkin was assisted by two other designers, Gorbunov and Gudkov; they worked as a team on the LaGG 1 and 3, but the other two left the bureau during work on the La 5 and from then on Lavochkin worked on his own, with the semi-skilled assistance of a team of trainees. It was a small bureau, much smaller than those of Tupolev or Yakovlev, and no famous designer ever left it to start up on his own (as did Pavel Sukhoi from the Tupolev team, for instance). It thus retained its continuity and identity to a much greater degree than did other teams in the field.

Lavochkin himself had a long career in aviation and an eventful life. Born in 1900 in Smolensk, he was of Jewish parentage, and thus came up against prejudice and frustration early in life; in the Russia of the Czars, Jewish blood was a complete bar to any real social or professional advancement. Finishing his schooling at the Kursk Gymnasium in 1918, the young Lavochkin immediately took part in the Civil War which followed the October Revolution. After three years combat service he was accepted late in 1920 as a student at the Moscow Aviation Institute, and graduated brilliantly. His patience and powers of application made him one of Russia's top designers, and he was awarded the Soviet Union's highest honours in the field of creative work—the rank of Lieutenant-General in the Engineering Services and the Order of Lenin with the Gold Star of a Hero of Socialist Labour. He continued his work long after the end of the Second World War, but his jet fighter design La 15 lost priority in favour of the MiG 15 in the design competition and was introduced to service in small numbers only; when he died almost exactly twenty years after VE Day, there were no aircraft bearing his designation in service with the V.–V.S. His fame sprung from the War, and waned with it.

The forerunner of the wartime fighters was the I-22 prototype, produced in 1938 in response to a Soviet Government design competition calling for a second generation fighter to replace the Polikarpov I-15 and I-16 in front-line service. The emphasis was on machines of mainly non-strategic construction; and three significant contenders emerged, the Mikoyan MiG 1, Yakovlev's Yak 1, and the I-22 or LaGG 1

Rare formation photograph of La 5's in the Moscow area. These are La 5FN fighters; after the introduction of the La 7 in mid-1944 the 5FN was mainly employed on low-level cover missions and the more powerful La 7 on interception duties, but mixed equipment in the Fighter Regiments was not uncommon. (Photo: Zdenek Titz)

Vitali Ivanovich Popkov, known to his comrades as "the aerial sharpshooter", boards an La 5. His superb marksmanship in the fighting over Poland and Berlin in 1944-45 brought him 41 confirmed kills, the command of a squadron and two Gold Stars. (Photo: the author)

La 5FN's of the 1st Czechoslovak Mixed Air Division at readiness; the pilots relax under the wings. Note parachute packs placed ready by the cockpits. (Photo: via R. Ward)

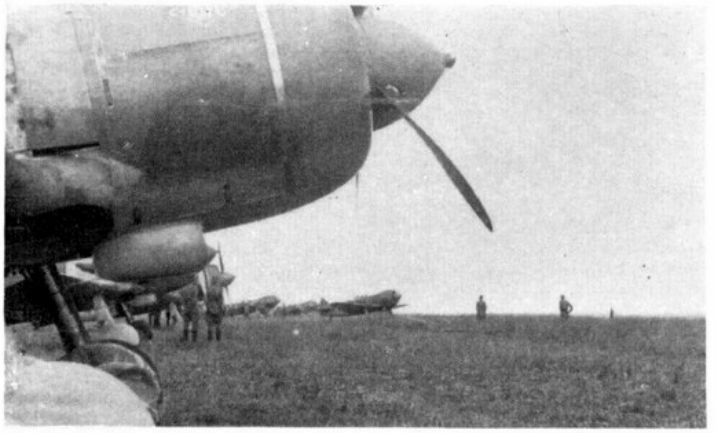
prototype. The latter flew for the first time on 30th March 1939, and was powered by the M105P in-line liquid-cooled engine; the LaGG 1 was produced in small numbers and introduced to service in 1940. After several modifications it took the form of the I-301 or LaGG 3 prototype, powered by the M 105PF engine. This too was produced in limited numbers only, entering service in late 1940 and being relegated to second-line units in early 1942. It was replaced by the LaG 5, powered by an M-82 two-row fourteen cylinder radial engine.

Design studies for the LaG 5 began in October 1941 and it became immediately apparent that the new variant would represent a dramatic improvement. The radial power-plant offered 1,600 h.p. as against the 1,100 h.p. of the M-105; the saving of weight in the removal of the cooling installation and wing-root air intakes, the lower weight of the engine-bearers, cowlings, and oil system, all these more than compensated for the added drag of the bulky radial. The aircraft was 10 km/h faster, much more suitable for rough-field operations, and with the change from rifle-calibre machine guns to 20 mm. cannon, more powerfully armed. It should be explained that the aircraft designated LaG 5 was an intermediate type, also sometimes referred to as the La 3, which utilised an original LaGG 3 airframe modified to take a radial engine during its passage down the production line. Only small numbers were produced, and it quickly gave way to the true La 5. This was powered by the M-82F engine, had the rear fuselage cut away to improve visibility, and featured a generally strengthened airframe. It passed its State Acceptance Trials in May 1942 and was in series production by July, 1,129 examples of the type being completed by the end of the year.

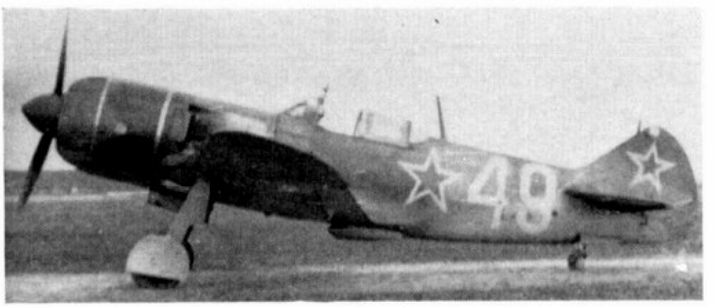
Main production of the La 5 was undertaken at State Aircraft Factory No. 21, and the Lavochkin bureau transferred its offices to that plant. Production lasted well into 1943 and spanned several technical modifications. Production man-hours per unit were progressively reduced to 40 per cent. of the original figure, allowing the completion of 8,790 more aircraft in the construction programme than had been planned. By the middle of March 1943, the weight of the airframe had been reduced by 160 kg. (353 lbs.) without disturbing production; and at the end of that month (according to Commissar of the Aviation Industry L. Shakhurin) the next sub-type had been introduced, the La 5FN powered by the 1,650 h.p. M-82FN engine. This variant had wings of slightly larger span and smaller chord, fitted with automatic boundary layer suction-powered leading edge slats. The standard armament of two 20 mm. ShVak cannons was supplemented by four RS 82 rockets or two PTAB hollow-charge anti-tank bombs. Internal construction featured metal longerons, lighter undercarriage structure and fuel tanks of reduced capacity. The external appearance of the FN model differed from that of the standard La 5 in the addition of a large air intake on top of the cowling. The La 5FN remained in production up to the end of the War, being built in parallel with the more advanced La 7.

The trainer variant, of which every Lavochkin-equipped fighter regiment possessed one or two for conversion training, was as usual designated La 5

Believed to be the commissioning ceremony of the 1st Czechoslovak Fighter Regt. in spring, 1944. Titled "Zvolenski", this unit was equipped with La 5FN's, and some La 7's. (Photo: via R. Ward)



A Red Air Force fighter unit in the summer of 1944; note characteristic bare metal bands round cowling of machine in foreground. (Photo: via R. Ward)



An La 7 of the 2nd Czechoslovak Fighter Regt. in 1945. Take-off power was increased by 200 h.p. over the La 5FN; and three cannons were sometimes fitted, two weapons being mounted asymmetrically to port of the centre-line. (Photo: the author)

An La 5 UTI of the 1st Czechoslovak Fighter Regt. at Balice, near Krakow in April 1945. Every Lavochkin-equipped unit had one or two of these trainers on the strength. (Photo: Zdenek Titz)

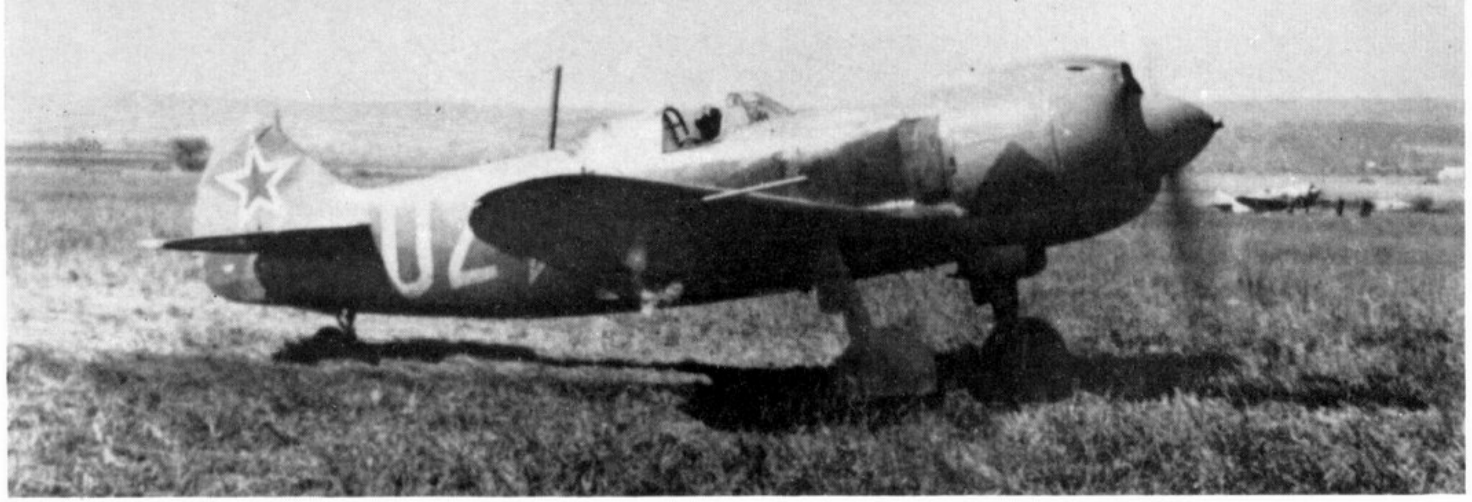
UTI. The fuel tankage was reduced, armament cut to one 20 mm. cannon, and a rear cockpit for an instructor fitted.

New modifications were carried out at S.A.F. 21 under the auspices of the design team, as a result of opinions gathered from front-line pilots and ground crews. Lavochkin made slight airframe alterations, changed the position of the airscoops, added a third cannon to the armament, and installed a more powerful engine, the M-82 FNU (or FNV). The fuel capacity was once more reduced, cutting the range by 130 km. (81 miles). The new model was designated La 7; it was introduced to the assembly lines late in 1943 and appeared at the front lines early in 1944. The final version of the series under examination was the La 7R, of which only two examples were built. This was a standard airframe with a rocket booster fitted under the tail; top speed was improved by 85 km/h, but the vapour from the liquid booster fuel dangerously affected the wooden structure of the aircraft, and in view of the imminent introduction of the La 9, the La 7R project was abandoned.

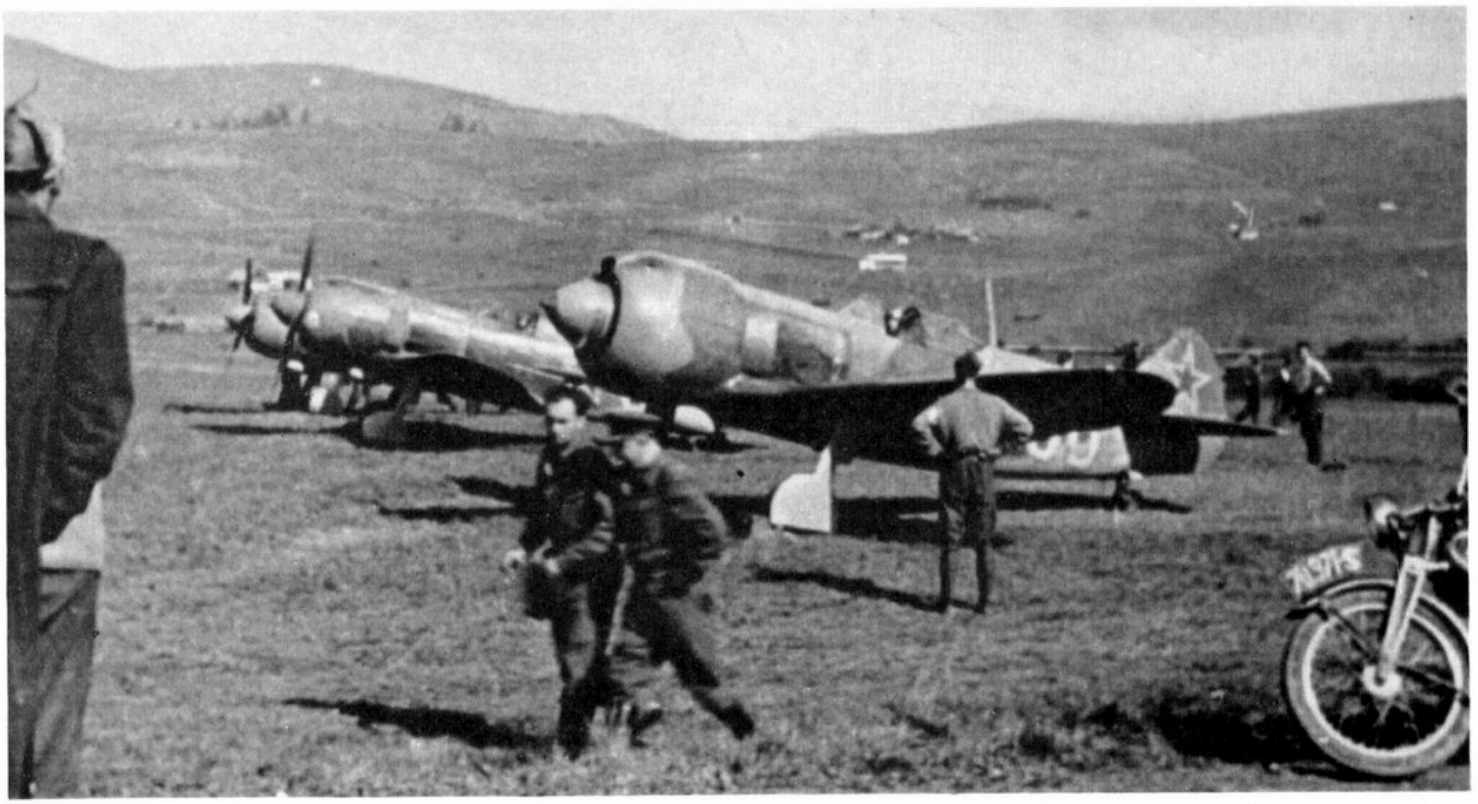
The famous Czech pilot Pavel Kocfelda with his La 5 "René", named after a girl he met in England while serving with an R.A.F. Czech fighter squadron earlier in the war; the machine carried the number "13" in large white characters on the rear fuselage. Like many ex-members of the Czech squadrons in England, Kocfelda transferred to the Eastern Front on the formation of the Czechoslovak Mixed Air Division. This photograph is believed to have been taken at Proskurov in the Ukraine. (Photo: Zdenek Titz)

Like all other fighters, the La 5 and 7 had their share of teething troubles; but these were not concerned with construction of the airframe. The M-82 engine itself remained the primary cause of trouble for some time. It was a development by Arkadi Shvetsov of the Wright Cyclone 14, with reduced stroke and cylinder volume (by 1·5 ltr., or 91·54 cu. in.), compression ratio increased to 7:1, and reduction of all dimensions. Early versions had conventional carburettors, but direct fuel injection was introduced with the M-82FN. The powerplant was produced in three basic versions: the M 82-111, with reduction gear 11:16, compression ratio 7:1, and inertia starter; the M 82-112, as the previous model but with a compressed air starter; and the M 82-212, as the -112 but with reduction gear 9:16. During factory evaluation tests this engine had not been "finished", and posed some problems, not the least of which was the weakness of the cylinder heads. One of the Lavochkin test pilots, Mark L. Gallai, recalls that on one La 5 test flight his engine was almost destroyed when one cylinder disintegrated and another lost its head—literally ! The resultant engine fire was fortunately blown out by the slipstream, saving Gallai's life, and the precious engine for the designers' *post mortem*. (Other pilots involved in the Lavochkin test programmes were Rastorguyev, Yakimov and Yuganov.) The M-82 was later named ASh 82, and after the successful eradication of its earlier vices became a most reliable powerplant, which is used to this day in the Il-14 transport and the Mil Mi 4 helicopter.

One interesting feature of the design, which may not seem consistent with the rather over-stressed crudity of Soviet wartime combat aircraft (by Western writers at least) is the fire-extinguisher system. Exhaust gases were passed through intercoolers and filters, water vapour being removed, and pumped into the fuel tanks; these gases at that stage consisted largely of carbon dioxide and nitrogen which served to damp any flames caused by an incendiary bullet in the fuel-vapour. With the exception of the actual fuel lines from tanks to engine, all tanks, joints and assistance tanks were filled with this neutral gas. In addition, the tanks were protected by armour, and covered with multi-layer resin and early formaldehyde products, sealing any hole in ten to fifteen seconds of the tank being pierced.



An La 5FN at Tri Duby in September 1944; on the 17th of that month 21 aircraft of two squadrons of the 1st Czech Fighter Regt. flew from Krosno in Poland to Zolná, the first time the Czech pilots had landed in their homeland for five years.
(Photo: L. B. Hansen via R. Ward)



Operating from the Tri Duby airfield complex in support of the Slovak National Uprising, the Lavochkins took the German forces completely by surprise. The occupying forces had no idea that air support was operating behind their lines, and the initial ground-attack raids on German airfields caused great damage among parked Luftwaffe *aircraft.* (Photo: H. J. Nowarra)

STRUCTURE DESCRIBED

The basic early version LaG 5 was of all-wooden construction; the fuselage consisted of birch frames with "criss-cross" skinning of wood/bakelite ply, fixed with a bakelite bonding glue. The fin was an integral part of the fuselage structure. The wings had two wooden spars and plywood skinning, being fitted with two-stage hydraulically operated flaps; all control surfaces were metal-framed with fabric skin. The undercarriage retracted hydraulically inwards with oleo-pneumatic shock absorbers and hydraulic wheel brakes. The steerable tail-wheel retracted backwards. The fuel installation comprised five built-in wing tanks. The M-82 powerplant of 1,600 h.p. drove an all-metal three blade ViSH 61 airscrew; armament comprised two 20 mm. ShVak cannon firing through the airscrew disc from the upper cowling. In later models the powerplant was the M-82F (*Forsirovannyi* — boosted) and the fuselage was cut down behind the cockpit, giving the true La 5 outline. The most widely-used model was the La 5FN (*Forsirovannyi Nyeposredstvenno* — directly boosted) in which the wooden longerons were replaced by metal and the engine was the improved M-82FN. Leading edge boundary layer operated slats were fitted and bomb/rocket racks installed underwing, immediately outboard of the undercarriage members. Direct fuel injection was employed and gave more power and increased operational elasticity. The La 7 retained the structure of the La 5FN with the exception of the new cockpit shape, the relocation of the oil cooler under the fuselage, and armament changes. All "derivations" of the basic models, such as UTI trainers, were taken straight from the assembly lines of their "parent" models for modifications and retained the standard structure. One detail that is perhaps worthy of note is that although the tail-wheel was theoretically retractable on all models, this was very rarely used; the wheel was locked down and all links to the hydraulic system closed off, the doors being reshaped and locked up.

A dramatic picture of an La 5FN of the 1st Czech Fighter Regt. being manhandled through the mud of the provisional airstrip at Brezno during the Slovak Uprising. Encircled by German forces, the Lavochkin units carried out constant harassing missions in support of the Insurgent Army in the heavy terrain of the Slovakian mountains.
(Photo: Zdenek Titz)

Thought to be a line-up of the 1st Czech Fighter Regt. on Tri Duby airfield, after the German retreat in 1945. The aircraft in the background appears to be an Ilyushin Il-2m.3 of the 3rd (Assault) Regt., 1st Czech Mixed Air Division.
(Photo: the author)

An La 7 and an I-16 UTI trainer. (Photo: Zdenek Titz)

DETAIL VARIATIONS AND PERFORMANCES

LaG 5. All wooden construction, inwards-retracting undercarriage, cockpit canopy fitting flush in fuselage spine. M-82 two-row, fourteen cylinder air-cooled radial engine: cylinder bore 155·5 mm., stroke 155 mm., working volume 41·2 ltr., compression ratio 7:1. Take-off power, 1,570 h.p. at 2,400 r.p.m. and 1·55 atmospheres pressure; fuel consumption 320 g/h.p./h. Nominal power 1,540 h.p. at 2,050 m. (6,656 ft.) altitude or 1,330 h.p. at 5,400 m. (17,716 ft.) at 2,400 r.p.m. and compressor pressure 1·29 atm. Fuel, 90 Octane, in five wing tanks with approx. total capacity of 500 ltr. (110 gall.). Engine diameter, 1,293 mm.; engine weight, 890 kg. (1,962 lb.). Wing span, 8·9 m. (28 ft. 2·4 in.); length, 8·87 m. (28 ft. 1¼ in.); wing area, 17·5 sq. m. (188·4 sq. ft.). Weight, empty, 2,950 kg. (6,503 lb.); max. loaded, 3,520 kg. (7,760 lb.). Maximum speed, 625 km/h (388 m.p.h.) at 3,000 m. (9,843 ft.); cruising speed at same altitude 520 km/h (323 m.p.h.). Climb to 3,000 m., 4 mins. 30 secs. Ceiling, 8,500 m. (27,887 ft.). Range, appr. 600 km. (373 miles).

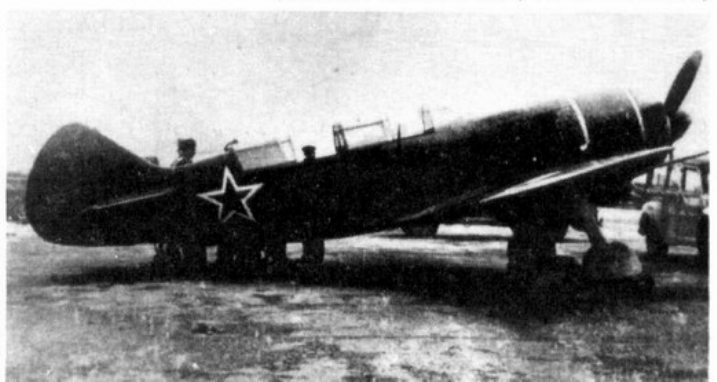
La 5. All data identical to above, except for installation of all-round-vision cockpit canopy.

La 5FN. Mixed wood-metal construction; metal fuselage longerons, wooden skinning. Powered by M-82FN engine dimensionally identical to M-82 but with direct fuel injection. Armament, two belt-fed 20 mm. ShVak cannon with 200 r.p.g., producing 1·76 kg./sec. (3·88 lb./sec.) weight of fire; also four 82 mm. R.S. 82 rockets or 150 kg. (331 lbs.) bombs. In later models the cannon were 23 mm. NS weapons. Take-off power, 1,650 h.p.; cruise power, 1,430 h.p. at 5,000 m. (16,404 ft.) and 2,400 r.p.m. Wing span, 9·8 m. (32 ft. 5¾ in.); length, 8·5 m. (27 ft. 10¾ in.); height, 2·54 m. (8 ft. 4 in.). Weight, empty, 2,800 kg. (6,173 lb.); loaded, 3,360 kg. (7,408 lb.). Maximum speed, 647 km./h. (402 m.p.h.) at 5,000 m.; cruising speed 622 km./h. (386 m.p.h.) at same altitude; landing speed, 155 km./h. (96 m.p.h.). Climb to 1,000 m. (3,280 ft.), 18·5 secs. Ceiling, 10,000 m. (32,808 ft.). Range, 700 km. (435 miles).

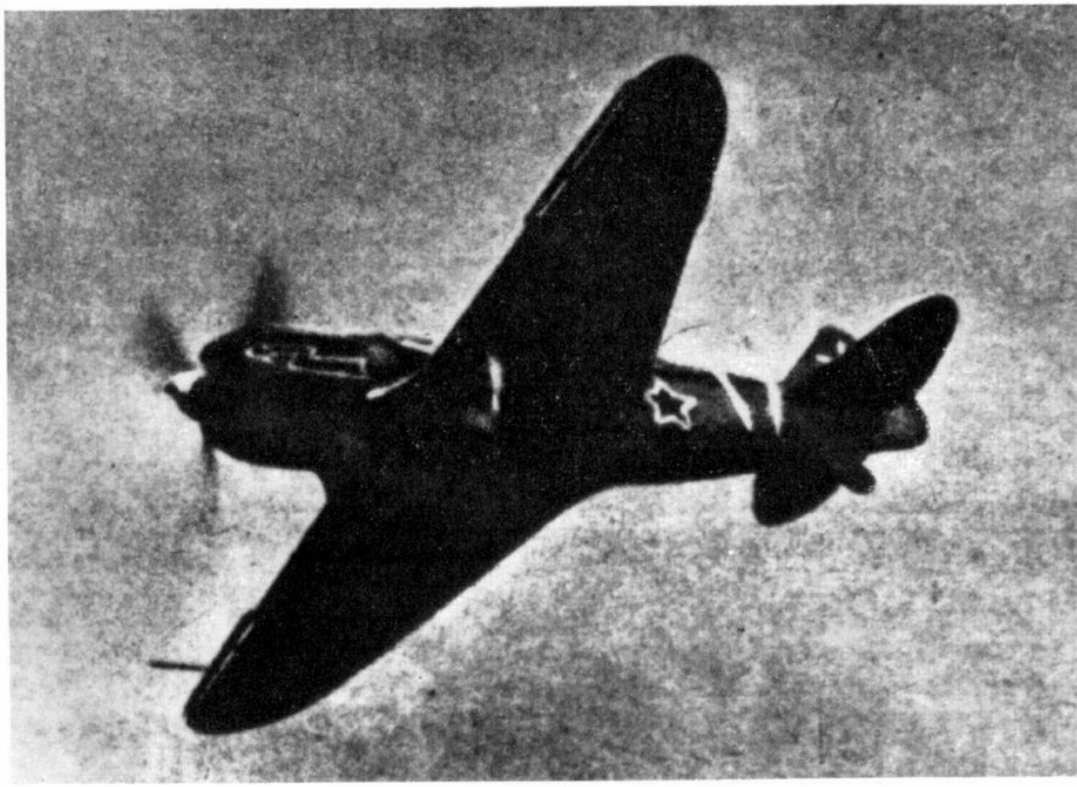
La 5 UTI. Second cockpit added, fuel and armament reduced; one cannon retained.

La 7. Air intakes relocated, small changes in cockpit outline. Powered by M-82FNU or FNV, a development of the M-82FN. Armament, three 20 mm. ShVak or 23 mm. NS cannon; also six 82 mm. RS 82 rockets or 150 kg. of bombs. Take-off power, 1,850 h.p. at 2,500 r.p.m. and 1·6 atm. press.; fuel consumption 325 g/h.p./h. Nominal power, 1,650 h.p. at 2,400 r.p.m., 1·36 atm. press., at 1,650 m. (5,413 ft.) altitude; or 1,450 h.p. with same parameters at 4,650 m.

The La 5 UTI and (right) *La 7 UTI trainers.* (Photos: Zdenek Titz, H. J. Nowarra)



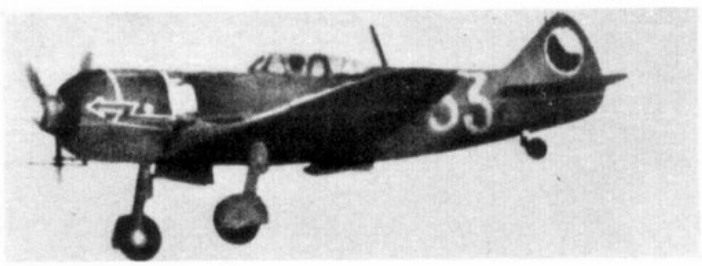
Rare in-flight view of an La 5 of the Czech Mixed Air Division in 1945, and (below) *an La 7 of the same unit, with arrow-lightning insignia retained, in Czech national markings.* (Photos: the author)



altitude (15,156 ft.). Engine weight, 900 kg. (1,984 lb.); power loading 0·49 kg./h.p. Engine diameter, 1,260 mm. (49·6 in.). Wing span, 9·8 m.; length, 8·33 m. (27 ft. 4 in.); height, 3·58 m. (11 ft. 9 in.); wing area, 17·5 sq. m. (188·4 sq. ft.). Take-off weight, 3,400 kg. (7,496 lb.). Maximum speed, 680 km./h. at 6,400 m. (20,997 ft.) altitude; cruising speed, 632 km./h. (393 m.p.h.) at 5,000 m. Climb to 5,000 m., 4 min. 27 secs. Ceiling, 10,500 m. (34,448 ft.). Range, 635 km. Flight time, appr. 1 hr.

La 7 UTI. Second cockpit added, fuel and armament reduced; one cannon retained. Oil cooler intake relocated below cowling, as La 5FN.

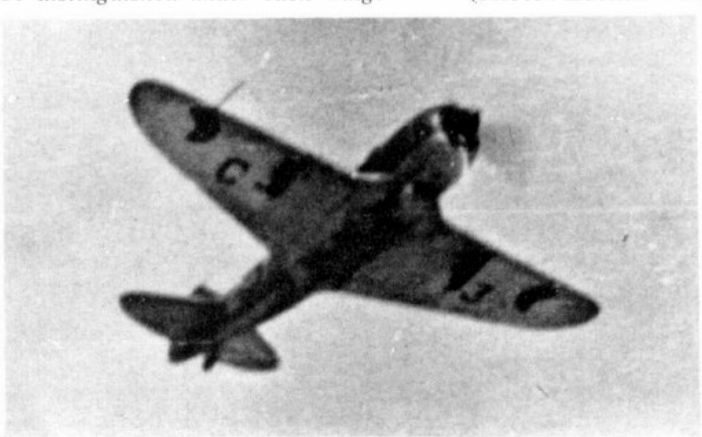
La 7 R. Standard La 7 with liquid fuel rocket booster attached. Top speed with both powerplants operating reached 805 km./h. (500 m.p.h.) at 5,000 m. altitude. Two examples built.



LAVOCHKINS IN SERVICE

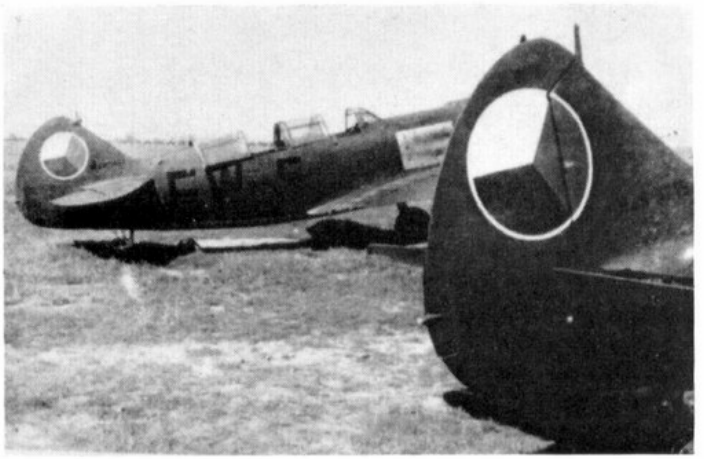
The first examples of the LaG 5 were put into the line in the spring of 1942 on the Finnish Front, for service evaluation. They proved themselves quickly; pilots trained on the I-16 and used to fighting with the LaGG 3 and MiG 3 had no difficulty in mastering the new machine. The maintenance crews in particular welcomed the LaG 5 with open arms; servicing the liquid-cooled powerplants of the LaGG 3 and MiG 3 and keeping the aircraft up to an acceptable standard of readiness in the hard North Russian winter was a nightmare task. The simple air cooled engine of the LaG 5 was a great improvement; and the extreme ruggedness of the fighter enabled it to absorb considerable combat damage, a most vital quality in campaigns fought over vast tracts of remote territory. The type's speed and climb compared favourably at its operating altitude with the performance of the Finnish Morane 406's, Brewster Buffaloes and Fokker D.XXI's. The successes which the new radial-engined machine quickly scored, and the discovery that it was superior to the I-16 at all altitudes and to the MiGs at low altitude (these being the best machines available for combat above about 18,000 ft.) led to the replacement of all other fighter types on the North Russian Front (with the exception of the Yak 1) with LaG 5's, and six months later with La 5's. The first large-scale use of the type came in November 1942 over Stalingrad, supplementing the Yak 1's and Yak 7's, and entering service simultaneously with the Yak 9.

Undersides of a Czech La 5, designated S-95. Bomb-racks can be distinguished under each wing. (Photo: Zdenek Titz)



The Lavochkins were essentially low-altitude fighters; but this was no disadvantage, as most combat in the Russian and Polish theatres of operations took place below 15,000 feet, where the Yaks and Lavochkins were at their best. Below 15,000 feet they could outclimb, outmanoeuvre and generally outfight the Bf 109 and Fw 190A; the strength of the more sophisticated German machines was in high-altitude combat, and the Soviet fighter pilots made sure they drew the *Luftwaffe* down to them whenever possible. The La 5 was used for bomber escort, ground strafing, and free chase sorties; equipped with bombs and rockets it supplemented the Ilyushins in the ground-attack rôle. In the Kursk battles of July 1943, Lavochkins made tank-busting attacks with rockets and hollow charge bombs, and then climbed to higher altitude to act as extra fighter cover for the Ilyushins.

When the La 7 entered service in mid-1944, the earlier model was not relegated to second-line duties; production and service continued, the La 5FN



Uncommon photograph of a Czech Air Force La 5 UTI trainer in post-war markings; as may be seen from the tail stencil of the nearer machine, the trainer was designated "ULa 5" by the Czechs. (Photo: Zdenek Titz)

equipping front line "cover" regiments and the La 7 being issued to interceptor regiments. It was not even unusual to find both types serving together in one unit. An example of the progressive introduction of the new models to service may be found in the log-book of Ivan Kojedub, the leading fighter ace of the Soviet Air Force, and the highest scoring fighter pilot of any Allied nation in the Second World War. In all he shot down 62 German aircraft, this figure being made up of 18 Junkers Ju 87's; two Heinkel He 111's; 19 Messerschmitt Bf 109's; 22 Focke-Wulf Fw 190A's; and one Me 262. These victories were gained during 520 combat sorties, all made in Lavochkin fighters.

Kojedub, now a Colonel-General and still on the Soviet Air Force active list, made his first combat sortie on 26th March 1943, flying a LaG 5. From 30th March he operated in the Kharkov area; and in February 1944 was awarded the Gold Star of a Hero of the Soviet Union. On 2nd May 1944 he received a La 5FN donated by subscription and inscribed "In the name of Hero of the Soviet Union Lt.-Col. N. Koniyev" (see colour illustration on p.2); and with this machine he scored eight "kills" in seven days, including five Focke-Wulf Fw 190's. Two of Kojedub's brother officers in his regiment flew La 5FN's inscribed "In the name of Valeri Chkalov"; one of them, A. Yestignyeev, scored 52 "kills" while flying Lavochkins. In July 1944 Kojedub received his famous La 7 marked with a white "27", being posted to the 1st Byelorussian Front as Vice-Commander of a Fighter Regiment. In this aircraft he scored his last 17 "kills", including one Messerschmitt Me 262 jet fighter over Berlin on 24th February, 1945. In February of 1944 he had received his first Gold Star of a Hero of the Soviet Union; at the turn of the year he was awarded the second, and received the third on Air Forces Day, 18th August, 1945. His last wartime sortie was on 19th April 1945, when in company with Lt. Titoryenko he attacked a formation of Fw 190's, both pilots destroying two enemy aircraft; in Kojedub's case, his 61st and 62nd victories.

Apart from Kojedub, only one other airman won the Gold Star three times; this was Alexandr Pokryshkin, now a Colonel-General of the V.-V.S., who began combat flying in the MiG 3 in summer 1941, and ended the war as a Colonel commanding a Guards Fighter Regiment, three times a Hero of the Soviet Union. Pokryshkin flew Lavochkins until late 1944 when his unit converted onto Yak 9U's. His final score was 59 "kills". The next ace was Lt. A. Alelyukhin, who also fought from the outbreak of war in 1941, his first combat operations being in the Odessa area; he flew all marks of Lavochkins over Kharkov, Stalingrad, Taganrog, Warsaw and Berlin, scoring 40 personal "kills" and 17 "shared" victories. In autumn 1943 he received the Gold Star, and was awarded a second one in January 1945. Now a Guards Colonel, Alelyukhin is still on active flying duties. Another prominent Lavochkin pilot who is still on active duty with the rank of Colonel is V. Ye. Kryutshkov. A Hero of the Soviet Union, he flew 558 sorties on Lavochkin fighters, took part in 118 combats and shot down 11 German aircraft, logging over 2,000 combat hours. Perhaps the most famous of all is "the Russian Bader"—the legless Hero of the Soviet Union Alexyei Myeresyev. Another famous personality in the V.-V.S. was Vitali Ivanovich Popkov, the "Aerial Sharpshooter". In 475 sorties and 38 strafing missions, he accounted for 41 enemy aircraft with his suberb marksmanship. Fighting over Poland and Berlin in 1944 and 1945, he ended the war as a squadron commander and a double Hero.

Lavochkins were often presentation aircraft; and apart from the examples quoted above, there were two La 5's which are a little unusual in this respect. They were donated by the jazz-band led by Leonid Utyosov, a popular Moscow musician, and were taken on charge by the V.-V.S. at Moscow-Kubinka airfield early in 1943. They were inscribed with a legend indicating their sponsors, and the name of the

An La 7 is now preserved at the Prague Technical Museum in Czechoslovakia; these photographs give good views of the engine, undercarriage, and cannon magazines. Note also the simplicity and smoothness of the general finish. (Photos: Josef Krybus)

Fine study of the La 7 preserved at Prague; finished in standard colours and markings, it is a fitting memorial to the thousands of Czech and Russian pilots who flew Semyon Lavochkin's clean, robust fighters to final victory in the East. (Photo: Josef Krybus)

jazz-band, "*Veselyie Rebyata*", which may be translated as "The Jolly Fellows". For some reason both aircraft proved very popular with pilots. They were flown for short periods by V. I. Popkov; and they both survived the war, ending their combat service in Berlin. During one three-month period their pilots scored nine "kills" while flying them.

FOREIGN SERVICE

The first non-Russian unit to receive Lavochkin fighters was the 1st Czechoslovak Mixed Air Division, formed in the Soviet Union on 1st June 1944. This comprised three regiments, the 1st and 2nd being fighter units equipped with the La 5FN and the La 7, and the 3rd being an attack unit flying Il-2's. Operating as part of the 2nd Air Army of the 1st Ukrainian Front (commanded by General Krasovski), the unit was transferred on 17th September 1944 to Tri Duby airfield to give air support to the Slovak National Uprising. The commander of the 1st "Zvolenski" Fighter Regt. of this Division was Colonel Frank Fajtl, previously of No. 312 (Czechoslovak) Sqdn., R.A.F. In fact 20 ex-members of the R.A.F.'s Czech squadrons (Nos. 310, 312 and 313) were among the personnel of the two fighter regiments, together with pilots from the Russian-administered 128th Czechoslovak Independent Squadron.

The 20 mm. ShVak cannon, standard armament for late-wartime Soviet fighters. The La 7 often mounted three of these guns, or three 23 mm. NS weapons.

(Photo: Josef Krybus)

On 15th May 1945, the 1st M.A.D. returned to Prague and became part of the new Czech Air Force; the balance of the three R.A.F. squadrons also returned to their homeland, arriving in Prague on 15th August. Lavochkin-equipped units were based in Slovakia, and the aircraft were given the Czech designation S-95 (La 5FN) and S-97 (La 7). Shortly after the end of the war all Lavochkins were grounded under the accusation that in bad weather conditions without permanent hangar facilities their structural strength fell off badly. They were vindicated after investigations at the Prague Aviation Research Institute, and once more placed in service. After their record on the Eastern Front through three Russian winters, it seems surprising that such an accusation should have been made in the first place.

The introduction of Lavochkins to the Polish Air Force had been debated in May–June 1944, and 600 pilots and ground crew were in fact sent to V.-V.S. training schools. However, the Yak fighters were chosen for wide service with the Polish forces in preference, and the men of the 75th and 76th Groups of the 7th Groundcrew Rota who received training on Lavochkins between 11th July 1944 and 6th March 1945 were posted to units equipped with the Li-2 and Tu-2, the only other aircraft in Poland with the ASh 82 engine. A few examples only of the La 5FN and La 7 were delivered to Poland for evaluation in peacetime conditions.

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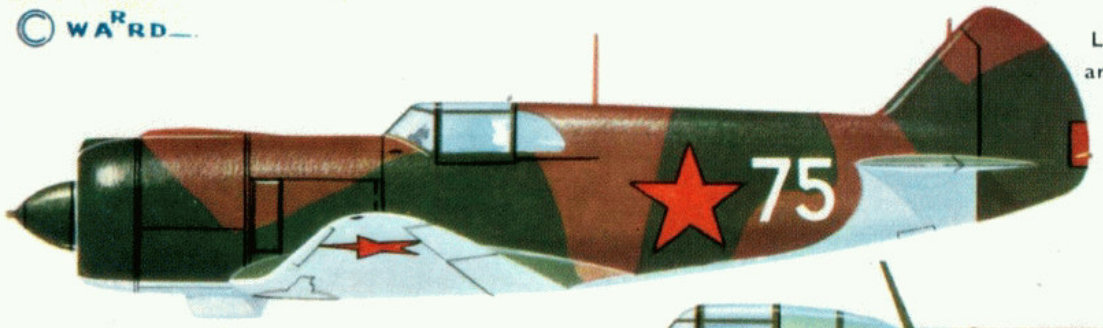


LaG 5 (La 3) flown by Ivan Kojedub in Kharkov area, March 1943. Note stars outlined in black.

La 5FN donated by Moscow jazz-band "The Jolly Fellows"; taken on charge by V.-V.S. at Moscow-Kubinka, spring 1943; served throughout war, flown occasionally by V. I. Popkov.

La 5FN flown by V. I. Popkov in Poland, 1944.

Веселие Ребята

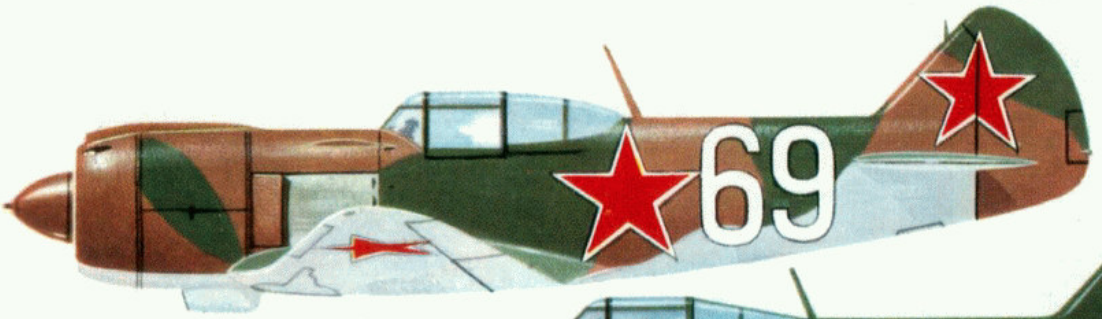
"The Jolly Fellows", port side under cockpit.

La 5FN in standard scheme, formation leader's aircraft.

От джаз-оркестра Л. Утесова

"From the jazz-band of L. Utesov", starboard side under cockpit.

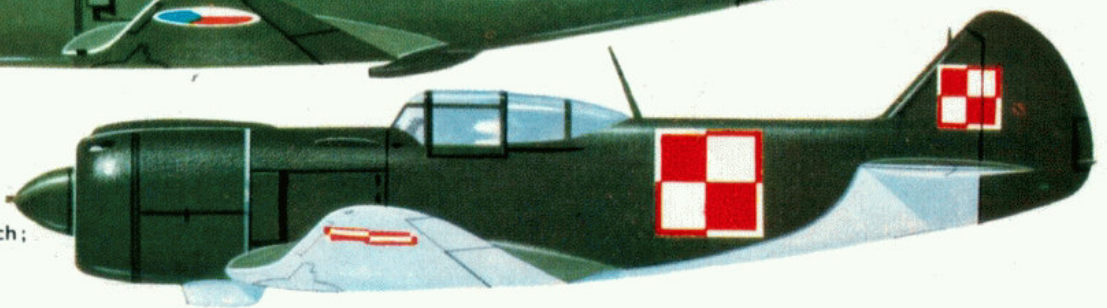
La 7 in standard scheme; note rear-view mirror and inscription (unknown) behind cockpit.



La 5FN of 1st Czechoslavak Fighter Regt.; Proskurov, Ukraine, 11th Sept. 1944.

S-97 (La 7) of Czechoslovak Air Force.

S-97 of Czechoslovak Air Force, as at Olomouc, Czechoslovakia, in autumn 1958.



La 5FN of Polish Air Force evaluation batch; never saw squadron service.